

tions to improve limited HL. **METHODS:** Systematic review with electronic database searches (MEDLINE, EMBASE, PsycINFO, CINAHL and COCHRANE-Library; from 1980 through January 2008), screening of selected books and reference lists, and expert contacts. We included observational and interventional studies that reported HL of participants as one outcome measure. We included populations at high risk for low HL as well as patients with 1) diabetes mellitus, or 2) hyperlipidemia. Studies were screened for eligibility, unclear cases were discussed in a consensus meeting. We performed data extraction and quality assessment; results were checked by a second reviewer. **RESULTS:** We retrieved 2340 papers and included 10 studies for the final analysis. On the health care system level, the additional spending due to low HL corresponds to 3% to 5% of the total health care costs (3 studies with data of more than 50,000 persons from U.S. and Swiss settings). The prevalence of limited HL is considerable (range: 34% to 59%; 4 studies; 110,000 nationally representative persons). Three U.S. studies (data of 3600 persons) report the additional costs of limited HL on the patient level (additional expenditures per year per person with limited HL compared to a reference group with adequate HL; range: US \$143 to 7798). One systematic review reported cost-effectiveness data of patient self management programs for diabetes and showed inconclusive results. **CONCLUSIONS:** The costs of limited HL for the health care system may be substantial, but few studies were retrieved, and the results are heterogeneous.

HEALTH CARE USE & POLICY STUDIES— Diagnosis Related Group

PHP6

CLINICAL AND ECONOMIC OUTCOME OF MECHANICALLY VENTILATED PATIENTS UNDER DRG 483 IN SPAIN: A POPULATION-BASED STUDY

Bouza C, Lopez T, Muñoz R

Carlos III Health Institute, Madrid, Spain

OBJECTIVES: To analyze the costs and discharge status for patients with prolonged mechanical ventilation undergoing tracheostomy (DRG code 483) in Spain and to examine the impact of age in terms of hospital outcome. **METHODS:** From the 2004 National Hospital Discharge Database records for all patients aged >16 years undergoing mechanical ventilation were retrieved. Demographic characteristics, clinical outcomes and hospital-resources utilization were examined. An exploratory logistic regression analysis and a multiple linear regression analysis were performed to identify factors associated with in-hospital mortality and LOS respectively. To depict the amount of resources spent to procure a given level of desired outcome (hospital survival) we also determined the cost per survivor based in the average National Health Service Charges for DRG 483 (€49,365.37). **RESULTS:** From a total of 33,416 cases undergoing mechanical ventilation during 2004, 4,277 cases (13%) with a final DRG code of 483 were selected and eligible for analysis. Median age was 65 yr (p25:50; p75:73); 67% were men and 54% surgical patients. According to Charlson index, 56% of cases had no associated comorbidity. Overall in-hospital mortality was 41%. Total costs of hospitalizations exceeded € 211 million. An inverse relationship between survival rate and age was consistently observed after adjusting by other clinical variables, and this resulted in an age-related increased cost per survivor (€58,588 in patients aged <45 yrs; €75,1531 in those aged 45–64 yrs; 99,720 in 65–74 yrs and €12,5903 in those older than 74 yrs). **CONCLUSIONS:** Patients who require tracheostomy for prolonged mechanical ventilation have high resource utilization and relatively poor outcomes. Age has a significant impact on outcomes in

patients under DRG 483 both from clinical and economic perspectives. These analyses will help inform health care decision-making and resource planning in the face of an ageing population.

PHP7

COMPARING THE ACTUAL HOSPITAL COST OF A PATIENT WITH OESOPHAGEAL CANCER TO NORMATIVE DRG REIMBURSEMENT

Varga S¹, Bogár L¹, Sebestyén A², Kriszbacher I¹, Vas G¹, Boncz I¹¹University of Pecs, Pecs, Hungary, ²National Health Insurance Fund Administration, Pecs, Hungary

OBJECTIVES: In the Hungarian DRG system it can frequently occur that real costs exceed the amount of reimbursements. Our goal was to compare the difference between the real clinical cost and the normative DRG reimbursement in a single patient case. **METHODS:** Data derive from the financial database of the National Health Insurance Fund Administration (NHIFA) and the clinical database of the University of Pecs. We made an outlay of the patient's variable costs for drugs, infusions, nutritive products, transfusions, laboratory diagnostics and imaging procedures used. The results we obtained were compared to standards calculated by the NHIFA for the surgical treatment of oesophageal cancer. The case was grouped to DRG code number 9540 which had 13.2 weight-number. **RESULTS:** The weight-number of medication components in this DRG category was 1.68 (12.7% of the total 13.2 weight-number). The real medication cost was HUF 3,960,000 which represented 39.6 weight-number. This exceeded the DRG medication reimbursement 23.6 times and was 3 times more than the total reimbursement. In this way just the medication cost was 300% of the total DRG financing. The excess cost was generated by increased drug usage due to the patient's severe septic complications. The main elements of medications were a four-day activated protenine-C treatment representing 53.5% of total drug expenditure, IgM enriched polyclonal antibody therapy (28.4%) and 5 different antibiotics (7.24%). The treatment of severe sepsis made up 89.1% of total medication cost. As an excess, 27.6 weight-number was reimbursed topping the 13.2 weight-number for the original DRG. **CONCLUSIONS:** There was a significant gap between real hospital costs and health insurance reimbursement. On the basis of this analysis, the NHIFA found our demand for extra finance justified and reimbursed our institution with the extra cost applied for. Our case significantly contributed to regulation changes dealing with extra financing for outlayer patient's costs in the DRG system.

PHP8

ADVERSE DRUG REACTIONS IN GERMANY: COST ANALYSIS OF INTERNAL MEDICINE HOSPITALIZATIONS

Rottenkolber D¹, Rottenkolber M², Schmiedl S³, Szymanski J³, Hasford J²¹Munich Center of Health Sciences, Munich, Germany,²Ludwig-Maximilians-Universität, Munich, Germany, ³University of Witten/Herdecke, HELIOS Klinikum Wuppertal, Wuppertal, Germany

OBJECTIVES: German hospital reimbursement changed significantly as a result of the introduction of Diagnosis Related Groups (DRG) in the year 2004. Based on this development no current data on the direct costs of adverse drug reactions (ADR) leading to hospital admissions in departments of internal medicine is available. The objective of our project is to quantify the ADR-related economic burden of the respective ADRs in Germany. **METHODS:** A total of 1242 patient records of ADRs leading to internal medicine hospitalization were surveyed in 4 regional pharmacovigilance centres in Germany within the years